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## Technology in Ohio's School Music Programs: An Exploratory Study of Teacher Use and Integration

The purpose of this study was to examine the status of technology use and integration in music programs throughout the state of Ohio. Factors under investigation were: (a) the types of technology used in music teaching and learning; (b) levels of teacher comfort with technology; (c) teacher training and preparation in the use of technology for teaching; and (d) teachers' views of obstacles toward integration. An anonymous, online questionnaire was completed by 552 K-12 music teachers in Ohio. Results indicated that teacher technology use is more frequent than student technology use, and certain technologies such as CD burning and the use of notation software were the most common. There was a moderate positive correlation between comfort with general technology and comfort with music technology [ $r = .49, p < .01$ ]. The disproportion between teacher use and student use of technology supports assertions of previous research, and suggestions are offered as to how teacher training may address this disparity.

Technology in education is a topic receiving great attention (Johnson, 2006; Levin & Wadmany, 2006–2007; Smith, 2006). This is also the case in music education, as evidenced by the work of organizations such as the Technology Institute for Music Educators and the Association for Technology in Music Instruction. Yet only a few researchers have examined how music teachers are using technology, and little is known about the types of technology music teachers use, the training they have in the uses of technology, and the obstacles integration faces. In addition, the unique environments of schools and geographic regions, along with the quickly evolving nature of technology, means that questions like these should be examined with some regularity and in a variety of teaching con-

texts.

In two studies conducted in the state of Illinois, researchers found that over a four year period there was a substantial increase in the integration of technology into school music programs (Reese, 2003; Reese & Rimington, 2000). School districts in Illinois are diverse, comprised of urban, suburban and rural settings, but there exist infinite differences between Illinois and other states. It may be possible to generalize the findings of these studies to other states, but there is little research that compares the status of music technology integration across state lines. An additional study was conducted regarding technology integration in Kentucky's school music programs (Sehmann & Hayes, 1997), but a comparative analysis is not truly possible until data are collected from additional states or regions.

In addition to the lack of research into the uses of music technology throughout the country, many of the factors that aid or hinder that integration remain uninvestigated. In the general education literature, teacher dispositions toward technology have been shown to influence curricular and pedagogical choices as they relate to inclusion or exclusion of technology (Levin & Wadmany, 2006-2007; Vannatta & Fordham, 2004). Variables such as school setting, administrative support, teacher attitude, opportunity for professional development, and lack of technical support, among many others, may influence the extent to which technology is integrated into classrooms (Littrell, Zagumny, & Zagumny, 2005; Rakes, Fields, & Cox, 2006; Russell, Bebell, O'Dwyer, & O'Connor, 2003; Staples, Pugach, & Himes, 2005; Strickland, Salzman, & Harris, 2000). From the music education literature, Reese & Rimington (2000) discussed the disparity between teacher use of technology and engagement of students in direct technology use.

Several large studies, again from the general education field, have been conducted that have examined technological integration; many of these investigations have focused on the alignment of technology-based practice with published sets of standards in various curricular areas (Barron, Kemker, Harmes, & Kalaydjian, 2003). Within the music field, a study by Taylor and Deal (2003) claimed that only 25% of music teachers within a national, randomly selected sample were using technology with their students. They concluded that teachers generally had a positive attitude toward using technology as a tool for teaching music, but that many of the teachers in their sample did not know enough about how to do so.

Almost thirty doctoral dissertations from the general education field in the last ten years have investigated factors that influence technological integration and the obstacles that stand in its way. Several of these studies have focused on the influence of budgetary constraints and socioeconomic factors on technology availability and

integration (Baker, 2003; Broadnax, 1999; Jeffreys, 2000; Pompeo, 2004). Others have concentrated on external influential factors such as teacher training, technical support, the influence of local and state standards, and the support of parents (Bonner-Thompson, 2000; Bradford, 1999; A. A. L. Harris, 2003; B. S. Harris, 1997; Johnson, 2006; Kirkpatrick, 2002; Smith, 2006; Stone, 2003). Still other studies have focused on teacher attitudes, comfort, and concerns toward technology, and the effect of those variables on integration (Coffland, 1999; Dawson, 1998; Ellis, 2003; Fontanarosa, 2003; Hinch, 2000; Hinds, 2004; Kemp, 2002; Leis, 2006; Maddin, 2002; Novick, 2003; Pavey, 2005; Robinson, 2003; Sechler, 2000; Shegog, 1997; Willis, 2007). The span of these studies throughout the last decade support the notion that factors that affect technology integration may evolve. Changes in technological capabilities and mandated uses of technology in schools suggest that we conduct studies to keep knowledge of these attitudes current.

Despite widespread desire among teachers to include technology in teaching and learning (Mills & Tincher, 2003), technology integration is difficult to measure because of the confusion over its operational definition. While certain technologies have more direct and obvious connections to music than others do, the definition of integration of technology into music teaching is not entirely different than that from the general education milieu. Okojie, Olinzock, and Okojie-Boulder (2006) provided a useful definition of the integration of technology into educational contexts:

In a broad sense, technology integration can be described as a process of using existing tools, equipment and materials, including the use of electronic media, for the purpose of enhancing learning. It involves managing and coordinating available instructional aids and resources in order to facilitate learning. It also involves the selection of suitable technology based on the learning needs of students as well as the ability of teachers to adapt such technology to fit specific learning activities. (Okojie, Olinzock, & Okojie-Boulder, 2006, p. 67)

For this study, technology integration was assumed to have two components: teachers making use of existing technology for planning and preparation of students' learning experiences, and activities in which students engage in using technology as a tool for enhancing those learning experiences. The particular technologies in question were drawn from several sources that have contributed to the establishment of standard content for technologically-based music study (Reese, McCord, & Walls, 2002; Rudolph, 2004; Rudolph et al., 2005; Watson, 2005; Williams & Webster, 2006), as well as nationally recognized foundations for the develop-

ment of technology-based education (*Advancing excellence in technological literacy: Student assessment, professional development, and program standards*, 2003; *Standards for technology literacy: Content for the study of technology, executive summary*, 2000). Teacher training in music technology, such as that endorsed by the Technology Institute for Music Educators, often subscribes to a standard list of technology “competencies” in areas such as computer-based notation, music production with sequencing software, multimedia development, electronic management and communications, and computer-assisted instruction. This conglomerate list forms the basis of questions posed on the survey form used in this study.

Another body of literature, which includes studies by Bird and Rosean (2005), Collier, Weinburgh, and Rivera (2004), and Finley (2004), has investigated the integration of technology into teacher training programs. That type of integration, however, does not typically fall victim to the same constraints as K-12 settings. While these large studies are important, they are of limited use for two reasons. First, technology-related studies must be performed frequently due to the rapid advances in everyday integration of technology into society. Studies of technology lose their relevance quickly due to the ever-changing software and hardware marketplaces, the decreasing cost of sophisticated technologies, and the infusion of technology into teachers’ and students’ daily lives. Second, studies in general education typically compare elementary, middle and high school settings without regard for the special concerns of music and the arts. In other words, music and the arts may use technology differently than other academic subjects. The current study addressed the first concern by asking participants to speculate about the most substantial obstacles to technological integration in their schools. The second concern was addressed by situating this study firmly in the music discipline rather than treating *education* as a whole and examining music as a subset—the participants for this study, as will be described below, were all K-12 music teachers.

The purpose of this study was to examine the status of technology use and integration in music programs throughout the state of Ohio. Questions addressed through this study were as follows:

Given a sample of Ohio K-12 music teachers:

1. Which types of music-related technologies are used most frequently, both in and outside of the classroom?
2. What level of comfort do these teachers have toward technology integration?
3. What types of music technology training have these teachers engaged in, and do they feel adequately prepared to teach with technology as a result of that training?

#### 4. How do teachers view the major obstacles toward technology integration into their music programs?

It was assumed for this investigation that among the most important factors in the integration of technology into music programs were the background, training, and attitudes of teachers; the characteristics of the school environment; and the curricular priorities of the teachers and the school districts in which they work. Several of these variables were examined in the studies on which this investigation expanded (Reese, 2003; Reese & Rimington, 2000), and several were included for exploratory purposes; that is, new variables were included in order to understand the uniqueness of the environment of Ohio's school music programs and its technological landscape.

## Method

In order to examine technology use in Ohio's schools, a web-based, password-protected survey (see Appendix A) was designed and hosted on a local university server. Initial contact was made with all members of the Ohio Music Education Association whose membership records included an email address, and who indicated in those records that they teach K-12 music. The initial email request for participation was sent to 1,629 teachers; 152 of those messages were returned as undeliverable (indicating an expired or changed email address). Therefore the initial email on December 1, 2006 reached 1,477 music teachers in Ohio. A reminder email was sent to the same population on January 9, 2007, and data were collected until February 1, 2007. The individual responses ( $n = 552$ ) were automatically recorded, providing a response rate of 37.4%. Participation in this study was optional and anonymous.

Data collection was conducted using a researcher-designed survey form, which was subjected to a pilot phase in which fifteen participants, all music education faculty and graduate music education students with experience teaching in the classroom, offered suggestions for slight modifications and clarifications. The survey form was designed in three parts. Section I contained questions about the participants' educational backgrounds, technological training, and their self-rated comfort in the use of technology to support music teaching. Section II examined the environments of the schools in which the participants work, and contained a matrix designed to measure the frequency of use of specific types of music technology, both by the teachers and their students. Section III contained items about the future of technology integration into the participants' music programs, obstructions to that integration, and the participants' opinions as to the types of

training that would be most valuable in the pursuit of technology integration. The survey was designed to be short—in the pilot phase it took each of the fifteen participants fewer than five minutes to complete—so that it would not take too much time out of the busy schedules of K-12 music teachers, and to avoid fatigue in this often-surveyed population.

Data were collected automatically through the web survey form and were maintained in a secure administrative database. Data were exported from the on-line system and entered into *SPSS for Windows version 14* for analysis.

## Results

### *Descriptions of the Sample*

The 552 respondents had a mean age of 41 years ( $SD = 11.15$ ), and averaged 16.8 years of teaching experience ( $SD = 10.162$ ). The majority of the respondents were female (54.2%;  $n = 299$ ), 44.6% ( $n = 246$ ) were male, and the remaining seven participants elected not to provide this information. Within the sample, 40% ( $n = 221$ ) held bachelors degrees, 42.2% ( $n = 228$ ) held master's degrees, 5.4% ( $n = 30$ ) held doctoral degrees, and the remaining 2.4% ( $n = 13$ ) did not report degree information. It should be noted that in the state of Ohio, teachers are required to obtain thirty credit hours beyond the bachelor's degree, but these credits need not culminate in a master's degree.

Respondents were asked to indicate the teaching level in which they spend the majority of their time during a given week, despite the fact that many split their time between levels. Elementary teachers comprised 23.2% ( $n = 128$ ) of the sample, 34.2% ( $n = 189$ ) were middle or junior high school teachers, and 35.9% ( $n = 198$ ) were high school teachers. The remaining 6.7% ( $n = 37$ ) of the sample did not report this information.

The respondents were asked to categorize their school as urban, suburban, or rural, despite the possibility that some schools may be difficult to place into one of these categories. Teachers in urban settings comprised 16.3% ( $n = 90$ ) of the sample, 44.2% ( $n = 244$ ) were suburban, 33.7% ( $n = 186$ ) were rural, and 5.8% ( $n = 32$ ) did not report this information.

Table 1 displays the respondents' teaching content areas. Respondents were asked to indicate each of the areas that they teach regularly; they were not restricted on the survey form to only a single area.

**Table 1***Respondents' Content Areas*

	Frequency	Percentage
Band	290	52.5
Elementary General Music	197	35.7
Chorus	195	35.3
Non-performing Class	167	30.3
Other Performing Ensemble	76	13.8
Orchestra	42	7.6

*Technology Use Frequency**Personal Technology Use.*

In response to research question 1, participants were asked to quantify the frequency of use of technologies related to the major areas of competency. The survey instrument did not include descriptions or definitions for the categories of technology; rather, it was assumed that if teachers were unaware of a certain type of technology, they would not be making current use of it. For each category, the largest percentage of respondents indicated that they use the associated technology less than once a month. Table 2 indicates usage frequencies for each category of technology displayed as percentages of the sample in each cell. For example, the table indicates that 45.3% of the respondents report that they use notation software to write or arrange music less than once a month, while 13.8% of the respondents use that type of technology about once a month.

In order to determine the most frequently used types of technology, a “regular use subtotal” was calculated—this figure is listed in the right-most column of Table 2. The technologies most commonly used in teacher’s personal work, based on the regularity subtotal, were CD burning, notation software, and electronic accompaniment.

**Table 2***Respondents' Personal Technology Uses*

	Less than once a month	About once a month	A few times a month	Less than once a week	About once a week	A few times per week	Daily	Regular use subtotal
Writing or arranging music with notation software	45.3%	13.8%	13.6%	4.0%	7.1%	8.5%	2.2%	17.8%
Creating music with a sequencer	83.5%	2.2%	2.2%	2.2%	1.1%	1.4%	0.9%	3.4%
Recording live performances	57.6%	17.6%	8.7%	1.8%	3.8%	2.7%	0.7%	7.2%
Burning CDs	28.3%	19.0%	19.9%	6.0%	11.1%	8.0%	1.6%	20.7%
Accompaniment	63.9%	8.5%	6.0%	2.9%	3.1%	4.9%	3.8%	11.8%
Making multimedia presentations	67.6%	10.1%	5.1%	3.6%	3.1%	2.0%	2.2%	7.3%

*Note.* The subtotal is the total of the values in the “about once a week,” “a few times per week,” and “daily” columns. A response in these columns was interpreted as an indication that a teacher makes regular use of the technology in question. The combination of these columns, then, provides a better estimation of the frequency with which the respondents use each technology regularly.

*Student technology use.*

The respondents were asked to quantify the frequency with which they have their students use technology for the same tasks as in the previous section. An additional category was added to this set of questions, that of the use of computer-assisted instruction. The inclusion of this technology category would have been inappropriate for the “teacher usage” question discussed above because it dealt strictly with teacher use. These data are displayed in Table 3.

The regular use subtotal scores for this section of the survey, which were calculated using the same procedure as above, indicate that the respondents most frequently have their students use computer-assisted instruction software, notation software, and CD burning. These frequency measurements are substantially lower than those for the top three categories in the previous set of questions. Of the 552 respondents, only 13 (2.4%) reported that they teach a class specifically focused on music technology. Computers are specifically dedicated to music classrooms in 201 (36.4%) of the respondents' schools.



Table 3

	Less than once a month	About once a month	A few times a month	Less than once a week	About once a week	A few times per week	Daily	Regular use subtotal
Writing or arranging music with notation software	81.2%	3.1%	3.1%	1.3%	1.3%	1.6%	0.7%	3.6%
Creating music with a sequencer	85.9%	2.0%	0.9%	1.3%	0.2%	0.4%	.9%	1.5%
Recording live performances	78.1%	6.5%	3.3%	1.4%	0.4%	0.9%	0.7%	2.0%
Burning CDs	77.2%	5.6%	3.6%	1.1%	1.8%	1.3%	0.7%	3.8%
Accompaniment	79.2%	3.4%	4.0%	0.9%	0.5%	1.1%	1.2%	2.8%
Making multimedia presentations	79.2%	6.5%	2.7%	0.9%	0.9%	0.7%	0.2%	1.8%
Computer-assisted instruction applications	69.7%	6.7%	6.3%	2.4%	2.4%	2.9%	1.6%	6.9%

### *Levels of comfort*

In response to research question 2, participants were asked to rate their own levels of comfort or expertise with technology in a number of ways. Each item was addressed using a six-point Likert-type scale anchored by the terms “novice” and “expert” for questions about expertise, and by the terms “not comfortable at all” and “extremely comfortable” for questions about comfort. First, the respondents rated their expertise in using computers for non-musical tasks. A mean value of 4.90 ( $SD = 0.887$ ) indicated that the respondents felt a relatively high level of expertise using technology for these types of tasks.

Respondents produced a substantially, yet not statistically significant, lower mean score regarding expertise in the use of technology for musical tasks such as notation, editing, and sequencing. The mean score on the same six-point Likert-type scale was 3.29 ( $SD = 1.392$ ). The Pearson Product Moment statistic showed a moderate positive correlation between comfort with general technology and comfort with music technology [ $r = .49, p < .01$ ]. In addition, respondents indicated a

mean score of 5.01 ( $SD = 1.069$ ) for comfort in using computers as part of their professional responsibilities.

Additional correlation statistics support the notion that older, more experienced teachers feel less comfortable using technology in professional situations. Weak, yet significant, negative correlations were found between age and teaching experience when correlated with all three measures of technological comfort, as shown in Table 4.

**Table 4**  
*Correlations of Age and Experience with Technology Comfort*

	Comfort with non-musical computer use	Comfort with musical computer use	General technology comfort
Age	-.250**	-.264**	-.221**
Years teaching	-.235**	-.217**	-.206**

\*\* $p < .05$

*Training and preparation*

Research question 3 addressed the types of training teachers had received in the use and integration of technology. Table 5 displays data regarding the participants’ technology training experiences. Again, the participants were asked to indicate all types of training they had received; that is, they were permitted to indicate more than one type of training. They were to respond “yes” or “no” to each type listed. Table 5 indicates the frequency and percentage of “yes” responses to each type of technology training. Additionally, participants were asked how well prepared they feel to use technology as a part of their teaching as a result of the training they had experienced. The mean score on a six-point Likert type scale was 3.64 ( $SD = 1.435$ ).

**Table 5**  
*Participants’ Technology Training*

	Number of Responses	Percentage
Coursework as an undergraduate student	206	37.3%
Coursework as a graduate student	202	36.6%
Inservice workshops provided by school or district	400	72.5%
Inservice workshops provided by another entity such as a college or training facility	192	34.8%
Personal exploration	459	83.2%

### *Priorities and obstacles to integration*

The participants were asked to indicate their attitude toward the importance of technology integration into their music programs. A large percentage of the participants (39.7%;  $n = 219$ ) indicated that they were very interested in technology integration, but that there were other priorities that needed to come first. Slightly fewer (37.1%;  $n = 205$ ) responded that improving technology is on their list of priorities, but that it is not among the most important issues that they face. A small percentage of the respondents (12.3%;  $n = 68$ ) indicated that technology integration is among their top priorities. As might be expected, the smallest proportion of the respondents (4.0%;  $n = 22$ ) claimed that they have no interest in improving technology integration in their schools. When asked about the most substantial obstacles that stand in the way of technological integration in their music programs, two items stood out. Budget or financial issues were the major obstacles (36.2%;  $n = 200$ ), while 31.3% ( $n = 173$ ) identified lacking equipment or facilities as the greatest impediment toward integration.

Finally, the respondents were asked to indicate what types of training would be most desirable for the acquisition of new information about technology and its uses in the music classroom. The most desirable type of training would come in the form of in-service workshops offered either by their schools or by another training entity for 62.5% ( $n = 345$ ) of the sample. Personal exploration was most desirable for 16.1% ( $n = 89$ ), while 13.8% ( $n = 76$ ) would seek out graduate coursework for music technology training.

## Discussion and Implications

Teachers from many levels of experience, who teach in varied content areas, and who have varying backgrounds were represented in the sample. This study was limited by the fact that it was conducted electronically; only those teachers with Internet access could participate. In addition, the sample frame for this study was based on the membership of the Ohio Music Educators Association; teachers who have not chosen to join this professional society, or who have not provided a valid email address, were not contacted to participate. It is therefore reasonable to cautiously generalize the results to the larger population of Ohio's K-12 music teachers.

Respondents' comfort levels with technology indicated that the sample of Ohio music teachers feels relatively at ease with the use of technology in their professional lives. A conclusion that can be drawn from the data presented in Tables 2 and 3 above is that teachers tend to use technology more for personal pursuits and for planning purposes than they do in pedagogical scenarios in which students are

engaged with technology. The correlation between general technology comfort and music technology comfort is a promising result that could signal teachers' eagerness to integrate their personal technology uses into their classrooms. An implication that may be drawn from this finding is that the infiltration of technology into society has affected the attitudes of music teachers toward uses of technology in a positive way. The statistical equality of teachers' level of comfort toward using technology for both personal and professional tasks may indicate that teachers are willing to include technology as a regular part of their arsenal of professional tools.

Perhaps the most surprising aspect of the analyses of the data is the disparity of technology use by teachers as opposed to technology use by students, which supports the findings of Reese and Rimington (2000). In terms of teacher use, the three most commonly used technologies were found to be CD burning, notation software, and electronic accompaniment. The most common responses for student use were CD burning, notation software, and computer-assisted instruction. Since computer-assisted instruction was not included in the list of possible responses for teacher use, it is fair to say that CD burning and notation software are the two most popular technological tools that these respondents put to regular use. The analysis showed that teacher use far outweighs student use, and it is therefore strongly suggested that professional development in music-related technologies focuses on authentic ways to integrate technology into the classroom, and to have students actively engaged in the use of technology for music learning. This statement echoes the conclusion by Reese & Rimington who wrote, "instructional models should include direct student use of computers for music learning even though student access to computers in music remains quite limited" (Reese & Rimington, 2000, p. 32).

While the major purpose of this study was to examine frequency of teacher uses of technology, if we can assume that the use of technology in pedagogically sound ways will enhance music teaching and learning, then it is disconcerting that teachers do not place technological demands or expectations on their students. While using technology for preparing teaching materials may be beneficial to teachers, if these are the only uses teachers make of technology, then students may not be directly engaged with learning to manipulate technology for their own educational gain. Among myriad possible reasons for the disparity between teacher use and student use are these.

1. Though teachers feel comfortable using the technology, they are not advanced enough in its use to feel comfortable teaching others to use it.

2. Hardware and software are in limited supply, which restricts the technological expectations that teachers can place on their students.
3. Teachers do not understand the pedagogical technique of using technology in the classroom.
4. Teachers are simply not interested in using technology to enhance their teaching.

In addition, combinations of these and other justifications may exist. Though these reasons are speculative, they each present possibilities for further research into the obstacles that prevent teachers from integrating technology with greater depth.

The analysis provided evidence that the future may hold trends toward the advancement of technology integration. More than three quarters of the respondents indicated that improved technological integration in their music program is a high priority. Previous scholarship has proposed that it is most appropriate to include technology pedagogy and integration practices at the pre-service level (Russell, Bebell, O'Dwyer, & O'Connor, 2003; Strickland, Salzman, & Harris, 2000). Including these topics during pre-service teacher training allows us to capitalize on the ways in which technology is embedded in our society. "New teachers who have grown up in a technology-rich environment enter the profession, their comfort and skill with technology will lead to increased use of computers for instruction" (Russell, Bebell, O'Dwyer, & O'Connor, 2003, p. 298). Music education can benefit from the current state of technology by promoting its natural presence in the curriculum. Forced integration may be detrimental to students and teachers alike (Okojie, Olinzock, & Okojie-Boulder, 2006). Previous research has posited that teachers with progressive dispositions toward technology are willing to accept technology as a part of the changing landscape of music education (Dorfman, 2006; Mills & Tincher, 2003).

Two specific suggestions from this study relate to the content of training teachers to use technology in their classrooms. First, development of knowledge and skills related to sophisticated music technologies such as notation software and sequencing software may encourage teachers to include those technologies in the curricula more readily. This supports earlier research that suggests that training in music technology integration may increase comfort level and frequency of use (Bauer, Reese, & McAllister, 2003). Second, teacher training in technology should aid teachers in making a transition from using technology as a tool for preparation of materials outside of class to using technology as a pedagogical aid with which students are engaged. The gap between teacher use and student use would logically begin to close if teachers were able to integrate technology skill-

fully and comfortably into their instructional practices by encouraging students to interact with it.

This study provides baseline data that demonstrate the current status of music technology in Ohio's public school music programs. As Reese & Rimington (2000) suggested, it is important that exploratory studies such as this be conducted in other geographic areas so that curriculum developers can compare the status of music technology across regions. Further investigation of the trends in Ohio should be conducted in order to track the progress of technology integration into music teaching and learning.

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## Appendix A

Greetings! Welcome to the Survey of Technology Use for Ohio Music Teachers. This survey is designed to provide information about the uses of technology in Ohio's school music programs.

Please complete as many of the following questions as possible. If you truly don't feel an item is applicable, try your best to answer it anyway, but skip it if an answer is not possible.

Other tips:

If in doubt, please answer questions to reflect your major teaching assignment. If you teach in more than one school, or have some other type of split assignment, you may answer for part of your teaching assignment or give an answer that reflects your whole job.

Your answers will be collected automatically. Please click the "Continue" buttons at the bottom of each page to move to the next section. There are three sections in the survey, and it should only take about 5 minutes to complete.

Please note that you will not be asked to provide your name on this survey, and that your answers will be kept completely anonymous. There are few risks associated with this research, and it has been kept as short as possible to avoid fatiguing you or taking too much of your valuable time. By clicking the "Go" button below, you acknowledge that you are aware that this survey is anonymous, that you are aware of the minimal risk involved, and you authorize the researcher to use your answers as part of the data collected, and possibly in a scholarly publication.

If you do have further questions, you can reach the researcher, Dr. Jay Dorfman, by calling (XXX) XXX-XXXX. Further information about the University's rules for research can be obtained from the, Acting Vice President for Research, Division of Research and Graduate Studies (XXX) XXX-XXXX.

Thank you for your willingness to participate in this study

☐ I have read the above statements and agree to participate in the survey.

## Part I – About You

Indicate your age \_\_\_\_

Indicate your gender: M/F

How many years have you been teaching? \_\_\_\_

Rate your level of expertise in the use of computers for non-musical tasks such as typing letters and papers, email, browsing the Internet, and administering your classes (attendance, grades, etc.).

Novice			Expert		
1	2	3	4	5	6

Rate your level of expertise in the use of computers for musical tasks such as the use of notation software, sequencing software, recording, editing digital music, and downloading music.

Novice			Expert		
1	2	3	4	5	6

Which of the following types of technology training have you had throughout your career?

- ☐ Coursework as an undergraduate student
- ☐ Coursework as a graduate student
- ☐ Inservice workshops provided by my school or district
- ☐ Inservice workshops provided by another entity such as a college or training facility
- ☐ Personal exploration of available technology
- ☐ None

How comfortable do you feel using a computer as part of your professional responsibilities?

Not comfortable at all			Extremely Comfortable		
1	2	3	4	5	6

What is the highest degree you have earned in a music or education field?

Bachelors

Masters

Doctoral

How well has your own training prepared you to use technology in your teaching?

Not well at all

Extremely well

1

2

3

4

5

6

## Part II – About Your School and Your Teaching

At what level is your primary teaching assignment? (Please indicate at which type of location you spend the majority of your time throughout a period of several weeks.)

☐ Elementary school

☐ Middle/junior high school

☐ High school

Categorize your school/district by geographic location:

☐ Urban

☐ Suburban

☐ Rural

Do you teach a class specifically focused on music technology?

☐ Yes

☐ No

Check all types of teaching in which you are involved on a weekly basis:

☐ Band

☐ Other performance classes (guitar, steel drum ensemble, etc.)

☐ Orchestra

☐ Non-performance secondary music classes (theory, history, appreciation, etc.)

☐ Chorus

☐ Elementary general music

Are computers designated specifically for the music room/building in your school?

☐ Yes

☐ No

How often do you *personally* (not with your students) use a computer to do the following tasks?

	Less than once a month	About once a month	A few times a month	Less than once a week	About once a week	A few times per week	Daily	Regular subtotal
Writing or arranging music with notation software								
Creating music with a sequencer								
Recording live performances								
Burning CDs								
Accompaniment								
Making multimedia presentations								

How often do your students use a computer in school, as a part of a lesson or activity in a music class, to do the following tasks?

	Less than once a month	About once a month	A few times a month	Less than once a week	About once a week	A few times per week	Daily	Regular subtotal
Writing or arranging music with notation software								
Creating music with a sequencer								
Recording live performances								
Burning CDs								
Accompaniment								
Making multimedia presentations								

In general, how well do you feel technology is integrated into the music curriculum in your school?

Not well at all					Extremely well
1	2	3	4	5	6

## Part III – About the Future

Check the statement that most accurately reflects your feelings about advancing technology integration into your school's music classes over the next five years:

- ☐ Improving technology integration is one of my top priorities.
- ☐ I am very interested in improving technology integration, but there are many other things that need to come first.
- ☐ Improving technology integration is on my list of priorities, but is not among the most important issues I face.
- ☐ I have no interest in improving technology integration.

What is the most substantial obstacle that prevents the advancement of technology integration at your school?

- ☐ My school faces no obstacles in the way of technology integration.
- ☐ Budget/financial issues
- ☐ Academic issues such as standardized testing, emphasis on reading, etc.
- ☐ Teacher disinterest
- ☐ Student disinterest
- ☐ Lack of teacher training
- ☐ Equipment or facilities are not available for my use

Which of the following types of training would be most desirable to you for learning to use technology and integrate it into your teaching?

- ☐ Graduate coursework (such as an evening class)
- ☐ Inservice workshops provided by my school or district

- ☐ Inservice workshops provided by another entity such as a college or training facility (such as a week in the summer)
- ☐ Personal exploration of available technology

Thank you for completing the survey. Your answers have been recorded automatically. You can now close your browser window.



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